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## Reflections on the Integration of Black and White Space

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The integration of black and white space has been the “holy grail” of the Department of Defense (DoD) practically from the inception of the space age. Since the watershed event that was Desert Storm, “Washington has devoted so much attention to fixing that problem that other vital uses for satellite data have sometimes been shortchanged.”<sup>1</sup> However, the conditions that led to the black/white framework no longer exist, which could lead one to the conclusion that the black/white frame of reference has become increasingly irrelevant. In fact, I assert it is worse than irrelevant; it is an impediment to progress.

### Background

Historically, the concept of black and white space has been defined by the interplay between the fear of another Pearl Harbor and the fear of expansionist communism. Two imperatives formed the foundation upon which the concept was built. The first imperative was to prevent strategic surprise. The second imperative was to establish and maintain the military capability to defeat a nuclear armed peer adversary. However, the implementation of the concept depended upon which imperative took precedence. The editors of the book *Eye in the Sky: The CORONA Story* described the lessons from Pearl Harbor and the fear of nuclear war thusly:

For many in the military, the lesson meant to be prepared for all contingencies. The natural inclination for military leaders was to plan for the worst-case scenario [nuclear war] ... For many in the Intelligence Community [IC], even within the intelligence branches of the US military, Pearl Harbor was a warning of the dangers of not knowing what America’s potential adversaries were planning and capable of doing ...<sup>2</sup>

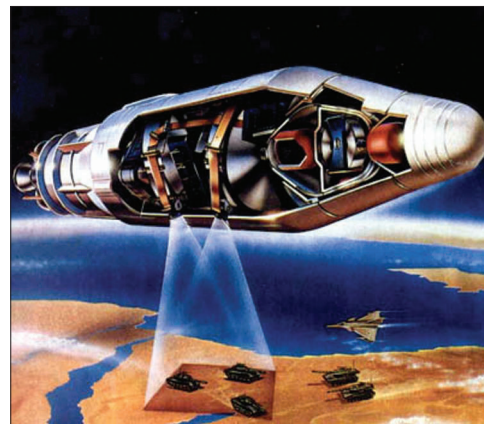
The two implementations came to be identified by their classification levels. The systems supporting the new discipline of “strategic reconnaissance,” which was focused on preventing nuclear war and strategic surprise, were highly classified and therefore called “black.” The more tactically and operationally

oriented systems such as those oriented towards bomb damage assessment were called “white.” The two implementations also had different technical needs. On the one hand, the systems identified as strategic had to provide details on potential adversaries’ strengths, weaknesses, and preparations for war; data latencies on the order of days to weeks were tolerable in most cases. On the other hand, the systems identified as tactical were much more focused on perishable data where speed took precedence. Because, “Eisenhower was concerned with preventing nuclear war, not waging it,”<sup>3</sup> the first space capability, CORONA, was focused on strategic reconnaissance, that is, it was “black.”

### The Impetus for Change

People began to focus on integrating the two implementations as it became clear the data was agnostic; it could be used to address either strategic or tactical questions as long as one understood its limitations such as accuracy or availability. Other key factors also played a part in the movement to integrate “black” and “white” space. Among them were technology, which began to address the data latency issue; the concept of maneuver warfare, which moved to the forefront of Army doctrine; and the push by the Soviets to build and sell increasingly accurate long range surface-to-air missiles. In response to these opportunities and pressures, the Intelligence Community (IC) and the DoD established programs such as the Tactical Exploitation of National Capabilities to bridge the divide between “black” and “white” capabilities. The galvanizing events that added a sense of urgency to the “black/white” integration efforts were Operations Desert Shield and Desert Storm. During that time General Norman Schwarzkopf complained frequently about his inability to get “national,” that is, “black,” space support in a timely manner at a classification level he and his forces, both US and coalition, could use. As if to emphasize the point some imagery had to be disseminated to military forces in-theater using couriers and airplanes.<sup>4</sup>

This is not to say the two imperatives have changed. Preventing strategic surprise is still of the highest priority as is be-



*KH-4A (Key Hole) of “Corona” family with 2 descent capsules.*

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*Historically the concept of black and white space has been defined by the interplay between the fear of another Pearl Harbor and the fear of expansionist communism.*

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Cpl Edward Chin, from New York, of the 3<sup>rd</sup> Battalion, 4<sup>th</sup> Marines Regiment, places a US flag on the face of Iraqi President Saddam Hussein's statue before tearing it down in downtown Baghdad, 9 April 2003.

ing able to wage and win the nation's wars. What has changed is our understanding of what information is strategic and what information is tactical. The driver behind this shift is the global telecommunication revolution.

### **"Can You Hear Me Now?"<sup>5</sup>**

In the past, the length of time and the expense of transmitting information were key factors in delineating the boundary between strategic and tactical information. The value of strategic information had to endure beyond the time required to assemble and deliver it to the national leaders. In addition, it had to be sufficiently important to warrant the cost of delivering it to them. The dawn of the electronic age saw the first dramatic reduction in the time required to deliver information, but the actual delivery was still expensive. For example, in 1914 the cost of cable rates per word from New York City to Japan was \$1.33 (then year dollars) per word.<sup>6</sup> Today with the advent of the World Wide Web we have the start of a true global grid that encompasses both land line and over-the-air broadcast. Not

only is communication nearly instantaneous, but it is also inexpensive. The cost per word to everywhere on the grid, let alone anywhere on the grid, is infinitesimally small. Where now is the boundary between strategic and tactical information?

The boundary is now defined solely by the purpose for which the information is used. The previous filters of time and treasure have been completely removed. Today one person's tactical information or action is another's strategic information or action. The magnitude of this change was illustrated early in Operation Iraqi Freedom when a young US soldier, during the tearing down of a large statue of Saddam Hussein, threw an American flag over the face of the Saddam Hussein statue. Sensing the reaction of the crowd of Iraqi citizens, he quickly replaced the American flag with an Iraqi flag. The crowd then cheered wildly. The entire sequence of events took only a few minutes. In the past it would have been neither noteworthy nor newsworthy, lost to history except perhaps as part of someone's memoirs, but this is the age of global communications. The sequence of events was caught on video and broadcast on the Web, CNN, Al Jazeera, and many other media outlets. The global reaction was swift and the impact lasting. While most of us would have considered the act tactical in nature, the Jihadists and others considered it strategic. The images of the US soldier placing an American flag over the face of the Saddam Hussein statue are among many replayed thousands of times a day on Jihadist Web sites as part of their strategic Information Operation campaign.

So in effect, the revolution in global communications has rendered the discussion of "black" and "white," that is, strategic and tactical, space integration moot. Time and treasure are no longer factors; therefore, space systems should no longer be typecast as strategic or tactical. The data these systems provide feeds the information set that informs the nation's decision-makers at all levels. That said, however, the impact of the global telecommunications revolution is broader than just shifting the discussion relative to the integration of "black" and "white" space. The concept of integration as it has been understood until now is no longer valid because it implies there are two separate implementations that can and should be brought together. Such a concept impedes progress because the boundaries implied by the phrasing of an idea often constrain the discussions of potential solutions.

### **A Glimpse of the Future**

The removal of the previously accepted understandings of strategic and tactical has put us in a time of transition. We need to implement an architecture that is a single structure, one that provides data to all users and meets "the needs of the disparate national security users—both military and civilian."<sup>7</sup> In this context the term "national security user" is not restricted to the traditional IC and the DoD, but rather is meant in its broadest

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connotation with regards to all elements of national power as applied to the national security framework of assure, dissuade, deter, and defeat. Although there are clearly limits, overall, to cite a commonly heard statement, “the need to know has been replaced by the need to share.”

The current approach to achieving the goal of providing data using the “need to share” philosophy is the net-centric approach. The DoD defines net-centric as cited below:

... net-centricity is the realization of a networked environment, including infrastructure, systems, processes, and people, that enables a completely different approach to warfighting ... by securely interconnecting people and systems independent of time and location, supports a substantially improved military situational awareness, ... and dramatically shortened decision cycles. Users are empowered to better protect assets; more effectively exploit information; more efficiently use resources; and create extended, collaborative communities to focus on the mission.<sup>8</sup>

From a US government perspective the definition would be modified to reflect the achievement of national goals vice just warfighting goals and a broader situational awareness not just military situational awareness. While we have started on a path to provide data and information in such a manner, we as a nation have a long way to go, but go we must. Short of the unraveling of civilization, the global telecommunications revolution is here to stay. What opportunities the move to net-centric will present is a matter open for debate. Even the most wild-eyed zealot can only imagine a tiny part of the change the move will enable. Each satellite bus, each payload, could be a node on the net which would consume, as well as generate, information. Each would be an active participant in the machine to machine processing chain. How, where, and by whom or what value is added to information will change as will the definition of “value” itself.

## Summary

The nation’s civilian and military leaders need information across the spectrum of peace through war. The information itself is agnostic: how we put the puzzle pieces together is what builds credible strategic and tactical context. To this end the question of integrating “black,” that is, strategic systems and capabilities, with “white,” that is, tactical systems and capabilities, is no longer the correct one. It has been overcome by the global telecommunications revolution. As we move to a net-centric implementation, the issue will shift from integration to the issue of value added. We are indeed in a time of transition. It is up to us to move out and shape the future.

Notes:

<sup>1</sup> Philip Taubman, *SECRET EMPIRE: Eisenhower, the CIA, and the Hidden Story of America’s Space Espionage* (New York, NY: Simon & Schuster, 2003), 364.

<sup>2</sup> Dwayne A. Day, John M. Logsdon, and Brian Latell, *Eye in the Sky: The Story of the CORONA Spy Satellites* (Washington, DC: Smithsonian Institution Press, 1998), 2-3.

<sup>3</sup> Ibid, 33.

<sup>4</sup> Bob Preston and John Baker, “Space Challenges,” *Strategic Appraisal: United States Air and Space Power in the 21<sup>st</sup> Century*, ed. Zalmai Khalilzad and Jeremy Shaprio (Santa Monica, CA: RAND, 2002), 155.

<sup>5</sup> Television advertising slogan used by Verizon beginning in about 2005.

<sup>6</sup> Innovator’s Dilemma Albert A. Hopkins and A. Russell Bond, *Scientific American Reference Book of 1914* (New York, NY: Munn & Co., Inc, 1914), <http://books.google.com> (accessed 30 May 2008).

<sup>7</sup> Robbin Laird, “The NRO and the USAF: Integration in Search of Purpose,” Space News Business Report, 5 September 2006, [http://www.space.com/spacenews/archive06/LairdOpEd\\_0904.html](http://www.space.com/spacenews/archive06/LairdOpEd_0904.html) (accessed 16 May 2008).

<sup>8</sup> Department of Defense, *Net-Centric Data Strategy* (Washington, DC: Department of Defense Chief Information Officer, 9 May 2003), 1.



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General Roberts entered the Air Force as a distinguished graduate of ROTC at Indiana University in 1977. Her career has spanned a wide variety of space operations, acquisitions, and staff assignments. She has served as a manned spaceflight engineer, program manager of a major acquisition program, major command and unified command staff, Joint Staff, and Office of the Secretary of Defense.

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